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Attorney Docket N .: 4394.214-US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Svendsen et al.

Confirmation No: 3011

Serial No.: 09/325,603

Group Art Unit: 1652

Filed: June 3, 1999

Examiner: E. Slobodyansky

For: α-Amylase Variants

AMENDMENT

Commissioner for Patents
Washington, DC 20231

Sir:

Before examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please add new claim 93, as follows:

93. A method for producing a variant of a parent alpha-amylase having an altered property relative to said parent alpha-amylase, wherein said altered property is selected from the group consisting of substrate specificity, substrate binding, substrate cleavage pattern, temperature stability, pH dependence of enzymatic activity, pH dependence of stability, stability towards oxidation, Ca2+ -dependency and specific activity, wherein said parent alpha-amylase has an amino acid sequence having at least 70% homology to the amino acid sequence of SEQ ID NO: 2, SEQ ID NO: 4 or SEQ ID NO:6, when homology is determined by the GAP program (Genetic Computer Group, Version 7.3) using default values for GAP penalties, said method comprising:

(a) identifying in a model of a three-dimensional structure of said parent alpha-amylase at least one amino acid residue or at least one structural part; wherein an alteration in said at least ne amino acid residue or said at least one structural part is predicted to result in said altered property, wherein said model was generated using a computer programmed for generating said model and wherein said model displays the coordinates for the three dimensional structure for SEQ ID NO:13 shown in Appendix 1 adapted to said parent alpha-amylase;

(b) modifyi. g the sequence of a nucleic acid encoding said parent alpha-amylase to produce a nucleic acid encoding a deletion, insertion, or substitution of one or more amino acids at a position corresponding to said at least one amino acid residue or said at least n structural part identified in step (a); and

(c) expressing said modified nucleic acid of step (b) in a host cell to produce the variant alpha-amylase.